federal register

Thursday
February 21, 1980

Part III

Department of Transportation

Coast Guard

Electronic Relative Motion Analyzer

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Part 164

[CGD 79-148]

Electronic Relative Motion Analyzer

AGENCY: Coast Guard, DOT

ACTION: Proposed rule.

SUMMARY: The Coast Guard proposes to require all self-propelled vessels of 10,000 gross tons or more that carry oil or liquid hazardous materials, in bulk that are U.S. vessels or call at a U.S. port to have an electronic relative motion analyzer installed by July 1, 1982. This requirement is mandated by the Port and Tanker Safety Act of 1978 (Pub. L. 95-474). It is intended to help minimize the occurrence of collisions involving those vessels which may have the potential of creating environmental harm.

DATES: Comments must be received on or before April 7, 1980.

ADDRESSES: Comments should be submitted to Commandant (G-CMC/TP24) (CGD 79-148), U.S. Coast Guard, Washington, D.C. 20593. Comments may be delivered to and will be available for inspection or copying at the Office of the Executive Secretary, Marine Safety Council (G-CMC/TP24), Room 2418, U.S. Coast Guard Headquarters, 2100 Second Street, S.W., Washington, D.C. 20593 (202) 426-1477. Normal office hours are 7:30 A.M. to 4:30 P.M., Monday through Thursday.

FOR FURTHER INFORMATION CONTACT: Mr. Fred Schwer, Project Manager, Office of Marine Environment and Systems (G-WLE-4/11), Room 1608, Department of Transportation, U.S. Coast Guard Headquarters, 2100 Second Street, S.W., Washington, D.C. 20593, (202) 426-4958.

SUPPLEMENTARY INFORMATION: The public is invited to participate in this proposed rulemaking by submitting written views, data, or arguments. Comments should include the name and address of the person making them, identify this notice (CGD 79-148) and the specific section of the proposal to which each comment applies, and give the reasons for the comments. If an acknowledgement that a comment has been received is desired, a stamped, self-addressed postcard or envelope should be enclosed.

All comments received before the expiration of the comment period will be considered before final action is taken on this proposal. No public hearing is planned, but one may be held if written requests are received and it appears that a hearing will be beneficial.

Drafting Information

The principal persons involved in drafting this document are: Mr. Fred Schwer, Office of Marine Environment and Systems, Project Manager, and Lt. Jack Orchard, Office of Chief Counsel, Project Attorney.

Discussion

Terminology

An "Electronic Relative Motion Analyzer" (ERMA) is a device designed to assist a ship's bridge watch officer in evaluating the patterns of radar "returns" of an object to determine the speed and direction of motion of the object. This information in turn is used by him to evaluate the threat which the object may pose to his own ship and to plan any evasive action which might be required.

Many terms have been used to describe this type of equipment. The United States Maritime Administration (MARAD) refers to their standard device as a "Collision Avoidance System." "Collision Avoidance Aid" is a generic term often used to describe the entire range of devices, from a simple "line of bearing" cursor to a fully automatic computer-controlled machine. Many people object to the use of the words "Collision Avoidance" in this context, quite correctly pointing out that the equipment does not prevent collisions, but only provides the watch officer with information so that he may do so. The Intergovernmental Maritime Consultative Organization (IMCO), a specialized agency of the United Nations, uses the term "Automatic Radar Plotting Aid (ARPA)" to describe, in its operational standard, a similar device. Because this notice is based on the IMCO standard, it uses the IMCO terminology.

Background

A notice of proposed rulemaking on this subject was published on May 16, 1977 (42 FR 24871). Public hearings were held in San Diego, California, on June 16, 1977, and in Washington, DC on June 21, 1977. The proposal was withdrawn on July 24, 1978 (43 FR 32112). As stated in the withdrawal notice, the proposal was withdrawn to encourage international action on the matter and the Coast Guard would "* * * reevaluate the need for a U.S. rulemaking * * * when the international body has completed its work."

Congress, however, in October 1978, enacted the Port and Tanker Safety Act of 1978 (PTSA) (Pub. L. 95-474). Section 5(7)(J)(ii) of the Act requires certain vessels of 10,000 gross tons or more to be equipped with an ARPA that is "* * * at least functionally equivalent * * *" to the MARAD standard (i.e., the "Collision Avoidance System"). In 1979, an excellent, comprehensive operational performance standard was developed, with U.S. participation, by a working group of IMCO. This standard has been evaluated by MARAD and is considered by that organization to be "at least functionally equivalent to the MARAD specification except in one area, namely 'Operational Warnings'." Paragraphs 3.5.1 and 3.5.2 of the IMCO ARPA standard specify "visual and/or audible" signals. The MARAD standard requires both visual and audible alarm signals for possible threats. In view of this determination, this proposal adopts the IMCO ARPA standard except that, to attain functional equivalence with the MARAD standard, the standard proposed herein would require both signals.

Paragraph 164.38(b) provides that devices installed before January 1984 for tankers of 40,000 grt or more, or before January 1985 for tankers of 10,000 but less than 40,000 grt, may comply with the MARAD specification rather than the IMCO standard. This equipment can be used until 1991.

Implementation

The PTSA requires all self-propelled vessels which carry oil or hazardous materials in bulk as cargo or in residue, which are U.S. vessels or foreign flag vessels which call at a United States port or which transfer oil or hazardous materials in any port or place subject to the jurisdiction of the United States, and which are of 10,000 gross tons or above, to have an ARPA installed not later than July 1, 1982, "* * * or such earlier date as agreed to internationally and accepted by the United States." An earlier date was not agreed to internationally. Rather, a proposed amendment to the Safety of Life at Sea (SOLAS) Convention, 1974, as amended, suggests adoption of the IMCO standard for tankers of 40,000 gross tons or more not later than January 1, 1984, and on tankers 10,000 gross tons or more not later than January 1, 1985. Consequently, the PTSA implementation date of July 1, 1982, applies to this rulemaking. It must be noted that this rulemaking applies to each self-propelled vessel which carries oil or hazardous material in bulk as cargo or in residue, and is not limited to tankers which are built or adapted primarily to carry oil or hazardous materials in bulk in the main cargo spaces.

Impact

It is estimated that 1500 vessels, calling at U.S. ports, will be affected by this rule. Of these, about 300 have complying equipment already installed. At an average cost of $70,000, the total purchase cost of the devices will be about $84,000,000. It is further estimated that U.S. manufacturers will have a 70% share in this market. Because U.S. flag vessels represent only about 17% of the vessels calling at U.S. ports, the rule could result in a net inflow of about $49,000,000 in foreign exchange to U.S.

Although the average cost of $70,000 is high, it must be noted that this sum represents only about 1% to 3% of the annual operating cost of typical vessels subject to this proposed rule and will increase the capital investment in the vessel by about one tenth of one percent. Moreover, depreciating the equipment over a 10 year period will result in a negligible amount attributable to the annual operating cost. Correspondingly, the pass through cost to the consumer will be negligible. Benefits accruing include a possible 10% reduction in vessel collisions and rammings.

This proposal has been reviewed under the Department of Transportation's "Regulatory Policies and Procedures" (44 FR 11034, February 26, 1979). A draft evaluation has been prepared and is included in the public docket.

In consideration of the foregoing, it is proposed to amend Part 164 of Chapter I of Title 33, Code of Federal Regulations as follows:

By adding § 164.38 and appendices A and B to that section to read as follows:

§ 164.38 Automatic radar plotting aids (ARPA).

(a) Each self-propelled vessel, except a public vessel, of 10,000 gross tons or more carrying oil or any hazardous material in bulk as cargo or in residue that is a U.S. vessel or operates on or enters the navigable waters of the United States, or which transfers oil or hazardous materials in any port or place subject to the jurisdiction of the United States, must, not later than July 1, 1982, be fitted with an Automatic Radar Plotting Aid which:

(1) Complies with the standard for such devices adopted by the Intergovernmental Maritime Consultative Organization in its "Operational Standards for Automatic Radar Plotting Aids" (See Appendix A);

(2) Provides both visual and audible warnings, described in paragraphs 3.5.1 and 3.5.2; and

(3) Except as allowed by paragraph (b) of this section, has a permanently affixed label containing—

(i) The name and address of the manufacturer; and

(ii) The following statement: "This device was designed and manufactured to comply with the Intergovernmental Maritime Consultative Organization's 'Operational Standards for Automatic Radar Plotting Devices'."

(b)(1) In lieu of the device required by paragraph (a), Automatic Radar Plotting Aids fitted on vessels of 40,000 gross tons or more prior to 1 January 1984, or on vessels of 10,000 but less than 40,000 gross tons prior to January 1985, which do not fully conform to the standard adopted by the Intergovernmental Maritime Consultative Organization but are certified by the manufacturer to comply with the U.S. Maritime Administration's "Collision Avoidance System Specification" (See Appendix B), may be retained until 1 January 1991.

(2) The devices allowed under this paragraph must have a permanently affixed label containing—

(i) The name and address of the manufacturer; and

(ii) The following statement: "This device was designed and manufactured to comply with the U.S. Maritime Administration's 'Collision Avoidance System Specification'."

Appendix A.—Performance Standards For Automatic Radar Plotting Aids (ARPA)

1 INTRODUCTION

1.1 The Automatic Radar Plotting Aids (ARPA) required by Regulation 12, Chapter V of the 1974 SOLAS Convention, as amended,[1] should, in order to improve the standard of collision avoidance at sea:

.1 Reduce the work-load of observers by enabling them to automatically obtain information so that they can perform as well with multiple targets as they can by manually plotting a single target; and

.2 Provide continuous, accurate and rapid situation evaluation.

1.2 In addition to the General Requirements for Electronic Navigational Aids (Resolution A. 281 (VIII)), the ARPA should comply with the following minimum performance standards.

2 DEFINITIONS

2.1 Definitions of terms in these performance standards are given in Annex 1.

3 PERFORMANCE STANDARDS

3.1 *Detection.*

3.1.1 Where a separate facility is provided for detection of targets, other than by the radar observer, it should have a performance not inferior to that which could be obtained by the use of the radar display.

3.2 *Acquisition.*

3.2.1 Target acquisition may be manual or automatic. However, there should always be a facility to provide for manual acquisition and cancellation. ARPA with automatic acquisition should have a facility to suppress acquisition in certain areas. On any range scale where acquisition is suppressed over a certain area, the area of acquisition should be indicated on the display.

3.2.2 Automatic or manual acquisition should have a performance not inferior to that which could be obtained by the user of the radar display.

3.3 *Tracking.*

3.3.1 The ARPA should be able to automatically track, process, simultaneously display and continuously update the information on at least:

.1 20 targets, if automatic acquisition is provided, whether automatically or manually acquired; or

.2 10 targets, if only manual acquisition is provided.

3.3.2 If automatic acquisition is provided, description of the criteria of selection of targets for tracking should be provided to the user. If the ARPA does not track all targets visible on the display, targets which are being tracked should be clearly indicated on the display. The reliability of tracking should not be less than that obtainable using manual recording of successive target positions obtained from the radar display.

3.3.3 Provided the target is not subject to target swap, the ARPA should continue to track an acquired target which is clearly distinguishable on the display for 5 out of 10 consecutive scans.

3.3.4 The possibility of tracking errors, including target swap, should be minimized by ARPA design. A qualitative description of the effects of error sources on the automatic tracking and corresponding errors should be provided to the user, including the effects of low signal to noise and low signal to clutter ratios caused by sea returns, rain, snow, low clouds and non-synchronous emissions.

3.3.5 The ARPA should be able to display on request at least four equally time-spaced past positions of any targets being tracked over a period of at least eight minutes.

3.4 *Display.*

3.4.1 The display may be a separate or integral part of the ship's radar. However, the ARPA display should include all the data required to be provided by a radar display in accordance with the performance standards for navigational radar equipment adopted by the Organization.

3.4.2 The design should be such that any malfunction of ARPA parts producing data additional to information to be produced by the radar as required by Resolution A.222(VII) should not affect the integrity of the basic radar presentation.

3.4.3 The size of the display on which ARPA information is presented should have effective display diameter of a least 340 mm.

3.4.4 The ARPA facilities should be available on at least the following range scales:

.1 12 or 16 miles;

.2 3 or 4 miles.

3.4.5 There should be a positive indication of the range scale in use.

3.4.6 The ARPA should be capable of operating with a relative motion display with "north-up" and either "head-up" or "course-up" azimuth stabilization. In addition, the

[1] This amendment has not yet been ratified.

ARPA may also provide for a true motion display. If true motion is provided, the operator should be able to select for his display either true or relative motion. There should be a positive indication of the display mode and orientation in use.

3.4.7 The course and speed information generated by the ARPA for acquired targets should be displayed in a vector or graphic form which clearly indicates the target's predicted motion. In this regard:

.1 ARPA presenting predicted information in vector form only should have the option of both true and relative vectors;

.2 An ARPA which is capable of presenting target course and speed information in graphic form, should also, on request, provide the target's true and/or relative vector;

.3 Vectors displayed should be either time adjustable or have a fixed time-scale;

.4 A positive indication of the time-scale of the vector in use should be given.

3.4.8 The ARPA information should not obscure radar information in such a manner as to degrade the process of detecting targets. The Display of ARPA data should be under the control of the radar observer. It should be possible to cancel the display of unwanted ARPA data.

3.4.9. Means should be provided to adjust independently the brilliance of the ARPA data and radar data, including complete elimination of the ARPA data.

3.4.10 The method of presentation should ensure that the ARPA data is clearly visible in general to more than one observer in the conditions of light normally experienced on the bridge of a ship by day and by night. Screening may be provided to shade the display from sunlight but not to the extent that it will impair the observer's ability to maintain a proper lookout. Facilities to adjust the brightness should be provided.

3.4.11 Provisions should be made to obtain quickly the range and bearing of any object which appears on the ARPA display.

3.4.12 When a target appears on the radar display and, in the case of automatic acquisition, enters within the acquisition area chosen by the observer or, in the case of manual acquisition, has been acquired by the observer, the ARPA should present in a period of not more than one minute an indication of the target's motion trend and display within three minutes the target's predicted motion in accordance with 3.4.7, 3.6, 3.8.2 and 3.8.3

3.4.13 After changing range scales on which the ARPA facilities are available or resetting the display, full plotting information should be displayed with a period of time not exceeding four scans.

3.5 *Operational warnings.*

3.5.1 The ARPA should have the capability to warn the observer with a visual and/or audible signal of any distinguishable target which closes to a range or transits a zone chosen by the observer. The target causing the warning should be clearly indicated on the display.

3.5.2 The ARPA should have the capability to warn the observer with a visual and/or audible signal of any tracked target which is predicted to close to within a minimum range and time chosen by the observer. The target causing the warning should be clearly indicated on the display.

3.5.3 The ARPA should clearly indicate if a tracked target is lost, other than out of range, and the target's last tracked position should be clearly indicated on the display.

3.5.4 It should be possible to activate or de-activate the operational warnings.

3.6 *Data requirements.*

3.6.1 At the request of the observer the following information should be immediately available from the ARPA in alphanumeric form in regard to any tracked target:

.1 Present range to the target;

.2 Present bearing of the target;

.3 Predicted target range at the closest point of approach (CPA);

.4 Predicted time to CPA (TCPA);

.5 Calculated true course of target;

.6 Calculated true speed of target.

3.7 *Trial manoeuvre.*

3.7.1 The ARPA should be capable of stimulating the effect on all tracked targets of an own ship manoeuvre without interrupting the updating of target information. The simulation should be initiated by the depression either of a spring-loaded switch, or of a function key, with a positive identification on the display.

3.8 *Accuracy.*

3.8.1 The ARPA should provide accuracies not less than those given in paragraphs 3.8.2 and 3.8.3 for the four scenarios defined in Annex 2. With the sensor errors specified in Annex 3, the values given relate to the best possible manual plotting performance under environmental conditions of plus and minus ten degrees of roll.

3.8.2 An ARPA should present within one minute of steady state tracking the relative motion trend of a target with the following accuracy values (95 percent probability values):

Scenario/Data	Relative course (degrees)	Relative speed (knots)	CPA (n.m.)
1	11	2.8	1.6
2	7	0.6	.....
3	14	2.2	1.8
4	15	1.5	2.0

3.8.3 An ARPA should present within three minutes of steady state tracking the motion of a target with the following accuracy values (95 per cent probability values):

	Relative course (degrees)	Relative speed (knots)	C.P.A. (n.m.)	TCPA (mins)	True course (degrees)	True speed (knots)
Scenario/data:						
1	3.0	0.8	0.5	1.0	7.4	1.2
2	2.3	.3	.....	.....	2.8	.8
3	4.4	.9	.7	1.0	3.3	1.0
4	4.6	.8	.7	1.0	2.6	1.2

3.8.4 When a tracked target, or own ship, has completed a manoeuvre, the system should present in a period of not more than one minute an indication of the target's motion trend, and display within three minutes the target's predicted motion in accordance with paragraphs 3.4.7, 3.6, 3.8.2 and 3.8.3.

3.8.5 The ARPA should be designed in such a manner that under the most favorable conditions of own ship motion the error contribution from the ARPA should remain insignificant compared to the errors associated with the input sensors, for scenarios of Annex 2.

3.9 *Connexions with other equipment.*

3.9.1 The ARPA should not degrade the performance of any equipment providing sensor inputs. The connexion of the ARPA to any other equipment should not degrade the performance of that equipment.

3.10 *Performance test and warnings.*

3.10.1 The ARPA should provide suitable warnings of ARPA malfunction to enable the observer to monitor the proper operation of the system. Additionally test programmes should be available so that the overall performance of ARPA can be assessed periodically against a known solution.

3.11 *Equipment used with ARPA.*

3.11.1 Log and speed indicators providing inputs to ARPA equipment should be capable of providing the ship's speed through the water.

Annex 1 to Appendix A.—Definitions of Terms To Be Used Only in Connexion With ARPA Performance Standards

Relative course—The direction of motion of a target related to own ship as deduced from a number of measurements of its range and bearing on the radar. Expressed as an angular distance from North.

Relative speed—The speed of a target related to own ship, as deduced from a number of measurements of its range and bearing on the radar.

True course—the apparent heading of a target obtained by the vectorial combination of the target's relative motion and ship's own motion.[2] Expressed as an angular distance from North.

True speed—the speed of a target obtained by the vectorial combination of its relative motion and own ship's motion.[2]

Bearing—The direction of one terrestrial point from another. Expressed as an angular distance from North.

Relative motion display—The position of own ship on such a display remains fixed.

True motion display—The position of own ship on such display moves in accordance with its own motion.

Azimuth stabilization—Own ship's compass information is fed to the display so that echoes of targets on the display will not be caused to smear by changes of own ship's heading.

[2] For the purpose of these definitions there is no need to distinguish between sea or ground stabilization.

/North-up—The line connecting the center with the top of this display is North.
/Head-up—the line connecting the center with the top of the display is own ship heading.
/Course-up—An intended course can be set to the line connecting the center with the top of the display.
Heading—The direction in which the bow of a vessel is pointing. Expressed as an angular distance from North.
Target's predicted motion—The indication on the display of a liner extrapolation into the future of a target's motion, based on measurements of the target's range and bearing on the radar in the recent past.
Target's motion trend—An early indication of the target's predicted motion.
Radar Plotting—The whole process of target detection, tracking, calculation of parameters and display of information.
Detection—The recognition of the presence of a target.
Acquisition—The selection of those targets requiring a tracking procedure and the initiation of their tracking.
Tracking—The process of observing the sequential changes in the position of a target, to establish its motion.
Display—The plan position presentation of ARPA data with radar data.
Manual—An activity which a radar observer performs, possibly with assistance from a machine.
Automatic—An activity which is performed wholly by a machine.

Annex 2 to Appendix A.—Operational Scenarios

For each of the following scenarios predictions are made at the target position defined after previously tracking for the appropriate time of one or three minutes:

Scenario 1:
Own ship course—000°
Own ship speed—10 kt
Target range—8 n.m.
Bearing of target—000°
Relative course of target—180°
Relative speed of target—20 kt

Scenario 2:
Own ship course—000°
Own ship speed—10 kt
Target range—1 n.m.
Bearing of target—000°
Relative course of target—090°
Relative speed of target—10 kt

Scenario 3:
Own ship course—000°
Own ship speed—5 kt
Target range—8 n.m.
Bearing of target—045°
Relative course of target—225°
Relative speed of target—20 kt

Scenario 4:
Own ship course—000°
Own ship speed—25 kt
Target range—8 n.m.
Bearing of target—045°
Relative course of target—225°
Relative speed of target—20 kt

Annex 3 to Appendix A.—Sensor Errors

The accuracy figures quoted in paragraph 3.8 are based upon the following sensor errors and are appropriate to equipment complying with the Organization's performance standards for shipborne navigational equipment.[3]

Note.—σ means "standard deviation"

Radar

Target Glint (Scintillation) (for 200 m length target)
Along length of target $\sigma=30$ m. (normal distribution)
Across beam of target $\sigma=1$ m. (normal distribution)

Roll-Pitch Bearing. The bearing error will peak in each of the four quadrants around own ship for targets on relative bearings of 045°, 135°, 225° and 315° and will be zero at relative bearings of 0°, 90°, 180° and 270°. This error has a sinusoidal variation at twice the roll frequency. For a 10° roll the mean error is 0.22° with a 0.22° peak sine wave superimposed.

Beam shape—Assumed normal distribution giving bearing error with $\sigma=0.05$.

Pulse shape—Assumed normal distribution giving range error with $\sigma=20$ metres.

Antenna backlash—Assumed rectangular distribution giving bearing error $\pm$ 0.5 maximum.

Quantization

Bearing—Rectangular distribution $\pm$ 0.01° maximum.
Range—Rectangular distribution $\pm$ 0.01 n.m. maximum.
Bearing encoder assumed to be running from a remote synchro giving bearing errors with a normal distribution $\sigma=0.03°$.

Gyro compass

Calibration error 0.5°.
Normal distribution about this with $\sigma=0.12°$.

Log

Calibration error 0.5 kt.
Normal distribution about this, 3 $\sigma=0.2$ kt.

* * * * *

Appendix B.—U.S. Maritime Administration, Collision Avoidance System Specification

A collision system designed as supplement to both surface search navigational radars via interswitching shall be installed. The system shall provide unattended monitoring of all radar echoes and automatic audio and visual alarm signals that will alert the watch office of a possible threat. The display shall be contained within a console capable of being installed adjacent to the radar displays in the wheelhouse and may form a part of the bridge console.

Provision for signal imput from the ship's radars, gyro compass, and speed log, without modification to these equipments shall be made. The collision avoidance system, whether operating normally or having failed, must not introduce any spurious signals or otherwise degrade the performance of the radars, the gyro compass or the speed log.

Computer generated display data for each acquired target shall be in the form of a line or vector indicating true or relative target course, speed and both present and extrapolated future positions. Data shall be automatically displayed on a cathode ray tube or other suitable display contrivance sufficiently bright and unobstructed to permit viewing by more than one person at a time.

In addition to displaying the collision potential of the most threatening fixed and moving targets, the system shall be capable fo simultaneously showing land masses.

The system display shall include a heading indication and bearing ring.The system shall also have the capability of allowing the operator to select "head-up" and to cancel the vector or line presentation of any of the targets. The presentation shall be non-smearing when changing modes or display scales in order to permit rapid evaluation of the displayed data.

Target acquisition, for display data purposes, may be manual, automatic or both, as specified by Owner.

For any manual acquisition system the alarms shall be intitiated by a preset minimum range; and likewise for any automatic aquisition system the alarms shall be initiated by a preset minimum acceptable passing distance (CPA—Closest Point of Approach) and a preset advance warning time (TCPA—Time to Closes Point of Approach). Means shall be provided to silence the audio alarm for a given threat but the alarm shall resound upon a subsequent threat. The visual alarm shall continue to operate until all threats have been eliminated. If the collision avoidance system fails to perform as indicated above, after the system is set for unattended monitoring, the system shall produce both audio and visual warning alarms.

The system shall be capable of simulating a trial maneuver.

In addition to the target display, an alpha-numeric readout shall be provided which can present range, bearing, course, speed, CPA and TCPA for any selected target, either on the target display or by other display means.

The collision avoidance system shall be energized from the interior communications panel board in the wheelhouse.

The collision avoidance function may be incorporated in an integrated conning system, provided that failure of any other integrated system component will not degrade the collison avoidance function.

(92 Stat. 1471 (46 U.S.C. 391(a) as amended)).

W.E. Caldwell,

Rear Admiral, U.S. Coast Guard, Chief, Office of Marine Environment and Systems.

February 19, 1980.

[FR Doc. 80-5438 Filed 2-20-80; 8:45 am]

BILLING CODE 4910-14-M

[3] In calculations leading to the accuracy figures quoted in paragraph 3.8, these sensor error sources and migintudes were used. They were arrived at during discussions with national government agencies and equipment manufacturers and are appropriate to equipments complying with the Organization's draft performance standards for radar equipment (preliminary) (NAVXXII/WP.14), gyro compasses (NAV XXI/9, Annex X) and logs (preliminary) (NAV XXII/WP.15). Independent studies carried out by national government agencies and equipment manufacturers have resulted in similar accuracies, where comparisons were made.

Reader Aids

Federal Register

Vol. 45, No. 36

Thursday, February 21, 1980

INFORMATION AND ASSISTANCE

Questions and requests for specific information may be directed to the following numbers. General inquiries may be made by dialing 202-523-5240.

Federal Register, Daily Issue:

202-783-3238	Subscription orders (GPO)
202-275-3054	Subscription problems (GPO)
	"Dial-a-Reg" (recorded summary of highlighted documents appearing in next day's issue):
202-523-5022	Washington, D.C.
312-663-0884	Chicago, Ill.
213-688-6694	Los Angeles, Calif.
202-523-3187	Scheduling of documents for publication
523-5240	Photo copies of documents appearing in the Federal Register
523-5237	Corrections
523-5215	Public Inspection Desk
523-5227	Index and Finding Aids
523-5235	Public Briefings: "How To Use the Federal Register."

Code of Federal Regulations (CFR):

523-3419	
523-3517	
523-5227	Index and Finding Aids

Presidential Documents:

523-5233	Executive Orders and Proclamations
523-5235	Public Papers of the Presidents, and Weekly Compilation of Presidential Documents

Public Laws:

523-5266 -5282	Public Law Numbers and Dates, Slip Laws, U.S. Statutes at Large, and Index
275-3030	Slip Law Orders (GPO)

Other Publications and Services:

523-5239	TTY for the Deaf
523-5230	U.S. Government Manual
523-3408	Automation
523-4534	Special Projects
523-3517	Privacy Act Compilation

FEDERAL REGISTER PAGES AND DATES, FEBRUARY

7227-7534.....1
7535-7770.....4
7771-7996.....5
7997-8276.....6
8277-8538.....7
8539-8932.....8
8933-9250.....11
9251-9726.....12
9727-9886.....13
9887-10304.....14
10305-10748.....15
10749-11110.....19
11111-11456.....20
11457-11794.....21

CFR PARTS AFFECTED DURING FEBRUARY

At the end of each month, the Office of the Federal Register publishes separately a list of CFR Sections Affected (LSA), which lists parts and sections affected by documents published since the revision date of each title.

3 CFR

Administrative Orders:

Presidential Determination:

No. 80-10 of January 24, 1980.....9251
No. 80-11 of January 28, 1980.....8539

Executive Orders:

12190.....7773
12191.....7997
12192.....9727
12193.....9885

Proclamations:

4334 (Amended by Proc. 4720).....7771
4463 (Amended by Proc. 4720).....7771
4466 (Amended by Proc. 4720).....7771
4539 (Amended by Proc. 4720).....7771
4720.....7771
4721.....8277
4722.....10749
4723.....11111
4724.....11457
4725.....11459

4 CFR

Proposed Rules:

331.....8677
332.....8677
351.....8677

5 CFR

Ch. XIV.....8933
213.....10751
315.....10305
317.....8541
432.....9253
737.....7402, 8544, 9253
1250.....10305
1251.....10305
1252.....10305
1253.....10305
1254.....10305
1255.....10305
1256.....10305
1257.....10305
1258.....10305
1259.....10305
1260.....10305
1261.....10305
1262.....10305
1263.....10305
1264.....10305
1265.....10305
1266.....10305
1267.....10305
1268.....10305
1269.....10305

Proposed Rules:

351.....7818, 8630
550.....7263

6 CFR

705.....7535

7 CFR

2.....10751
6.....9881
16.....7999
20.....8561
210.....7227
220.....7227
225.....7227, 8562
226.....10752
235.....8562
272.....7229
273.....7229
371.....8564
417.....9887
418.....9887
428.....9887
432.....9888
433.....9888
434.....9888
435.....9889
723.....8570, 10305
724.....8572
726.....8578
781.....7775
795.....10311
905.....7999
907.....8279, 9889, 9890, 11461
910.....7243, 8579, 10311
959.....7243
989.....11461
1000.....7777
1280.....9890
1446.....11462
1464.....9253
1701.....9258
1900.....8933
1904.....10312
1945.....9848
1980.....9848
2006.....7245

Proposed Rules:

Ch. XXVIII.....10810
246.....8876, 9304
301.....8630, 8654
971.....9010
1011.....9942, 11503
1434.....9943
1701.....7819, 10356
1822.....10240
1944.....10240
2851.....8637
2852.....10356

8 CFR

Ch. II.....7778

3.....9893
212.....11113
238.....10312
334.....10313
336.....10313
341.....10313
Proposed Rules:
Ch. I.....7265

9 CFR

75.....8580
78.....7246
92.....7778, 8581, 10314
10752
145.....10314
147.....10314
318.....10317
319.....10317
381.....10317, 10319
Proposed Rules:
Ch. III.....10810
92.....10359
307.....8662
381.....8662

10 CFR

Ch. II.....10321
9.....9729
21.....9893
73.....10328
110.....11114
212.....9526
375.....9526, 9536
376.....9536
391.....9526
445.....10194, 10232
455.....7779
470.....8926
475.....9542
477.....8462
714.....7768
1014.....7768
Proposed Rules:
50.....10360
73.....11503
212.....8025
376.....8662, 10360
390.....8662, 10360
436.....7496
477.....8309
516.....10746
1024.....8920

11 CFR

9032.....9559
9033.....9559
9034.....9559
9035.....9559

12 CFR

1.....8934
16.....11115
202.....9259
205.....8248
225.....8279, 11125
226.....8000, 9259, 10329
304.....8940
329.....8937
349.....8940
590.....7535, 8000
614.....9893
618.....10328
701.....8280
Proposed Rules:
Ch. I.....9743
Ch. II.....7591
7.....8025
205.....8268
210.....7819
614.....9944
720.....7596
341.....10802
343.....10802

13 CFR

123.....10754
400.....8940, 8942
Proposed Rules:
Ch. I.....7553
121.....7555

14 CFR

23.....7750
25.....7750
27.....7750
29.....7750
39.....7536–7539, 8297, 8943–8952, 10755, 11465
71.....7539, 8286, 8287, 10756–10758, 11465
73.....7539
75.....10758
91.....7750
97.....8287, 11466
121.....7750
135.....7246, 7540
152.....10184
223.....8955
297.....7542
1214.....8001
385.....9260
Proposed Rules:
Ch. I.....9944, 10802, 11504, 11506
Ch. V.....10808
39.....7555–7558, 9945, 10803 11506, 11507
71.....7558, 7559, 8309–8311, 9946, 9947, 10804–10806, 11507–11510
75.....10807
93.....11510, 11511
159.....11511
205.....7566
208.....7566
291.....7566
298.....7566
399.....9747

15 CFR

303.....8955
376.....8289
386.....8289
399.....8289, 8293
2301.....7780, 8582

16 CFR

13.....8583, 8959, 9894, 9895
Proposed Rules:
Ch. I.....10810
13.....8663, 11135, 11137
71.....10804–10806
75.....10807

17 CFR

200.....8001
231.....8960
Proposed Rules:
180.....8312
200.....7781
230.....7578, 8313
239.....7578
240.....8313
274.....7578

18 CFR

46.....9729
271.....7248, 7781
Proposed Rules:
292.....8665, 9011
401.....8665

19 CFR

10.....10758
353.....8182
Proposed Rules:
Ch. I.....7533, 10360
101.....10365
200.....11512
353.....8026

20 CFR

Proposed Rules:
404.....8586
410.....10809
616.....7974
689.....10330

21 CFR

5.....7782, 8586
14.....8587, 10331
16.....7474, 10332
20.....7474
103.....10759
146.....7784
193.....8979
510.....7249
520.....8587, 10332, 10333, 10759, 10760
556.....10333, 10334
558.....7249, 7787, 10334
606.....9261
809.....7474
861.....7474
870.....7904–7971
1308.....11125
Proposed Rules:
Ch. I.....10810
Ch. II.....8666
Subchapter J.....8870
25.....9286
58.....7268
182.....9286
184.....9286
348.....7820
353.....7268
357.....9286
1312.....9289

22 CFR

51.....11128
Proposed Rules:
208.....9293

23 CFR

Proposed Rules:
625.....10236

24 CFR

201.....9895, 11128
203.....9895
205.....9895
207.....9895
213.....9895
220.....9895
221.....9895
232.....9895
234.....9895
235.....9895
236.....9895
241.....9895
242.....9895
244.....9895
250.....9895
570.....9730, 10740
841.....7787
Proposed Rules:
Subtitle A.....7978
Subtitle B.....7978
200.....8026, 9948
885.....9748, 11513

25 CFR

256.....8002
273.....9241

26 CFR

1.....8003
5.....8295
25.....8003
46.....10334
49.....10334
138.....8589
301.....11468, 11470
601.....7250
Proposed Rules:
31.....8666, 8668
48.....8669
301.....11513

27 CFR

19.....7528
72.....8592
250.....7528
Proposed Rules:
Ch. I.....7533, 10367

28 CFR

Proposed Rules:
Ch. I.....7268
Ch. V.....8666
16.....7820

29 CFR

403.....7525
1601.....7542
1910.....8593
1952.....8594–8596, 10334, 10335, 10337
Proposed Rules:
Ch. XIV.....9948
1.....10374
4.....10375
5.....10375
1603.....7514
1910.....10375, 10732
1918.....10732
1926.....10732
1928.....10732
2550.....7521

30 CFR

700.....8240
785.....8240
816.....8240
817.....8240
820.....8240
Proposed Rules:
700.....8241

701 8241
761 8241
786 8241
816 8241
817 8241

31 CFR

51 8296
240 7259

Proposed Rules:

Ch. IV 10377

32 CFR

69 10338
562 9262
701 8598
720 8598
722 8598
728 8598
730 8598
737 8598
750 8598
755 8598
757 8598
818 9898

Proposed Rules:

288 10377

32A CFR

106 8600

33 CFR

110 10760
117 ..... 8980, 9903
165 7543
183 7544

Proposed Rules:

110 10810–10815
117 9951
148 10172
150 10172
161 9011
164 11790
207 9296

35 CFR

253 7788

36 CFR

7 10350

38 CFR

8 9732
36 10340

Proposed Rules:

3 9297
17 7268

39 CFR

10 8297
601 9732

Proposed Rules:

111 9011
3001 11139

40 CFR

35 7788
51 7800
52 ..... 7544, 7800, 7801, 7803 8004, 8009, 8299, 9733, 9903, 10761, 10766, 10775, 11472, 11495
60 8010
65 ..... 10341, 10342, 10344
81 ..... 7544, 8011, 9262, 10766, 10775
86 10783
120 9910
180 ..... 8012, 8980, 9742
211 8272

Proposed Rules:

52 ..... 7821, 8004, 8009, 8313, 8669, 8670, 9012, 9749, 9750, 9752, 9952, 9953, 10738, 10815, 10817
60 ..... 7758, 11444
81 ..... 7582, 8670, 9012 11140
86 9753
125 9548
180 ..... 7821, 7822
250 9755
419 11141
446 8028
447 8028

41 CFR

Ch. 101 ..... 7260, 9267
1–1 ..... 8602, 10789
1–2 10789
1–3 ..... 8602, 10789
1–4 10789
1–7 10789
1–15 10786
1–16 10789
3–3 7545
4–1 11129
8–3 7813
8–5 7813
8–8 7813
8–11 9266
8–76 8981
51–3 10345
51–4 10345
60–1 9271
60–250 9271
60–741 9271
101–47 10793
105–61 8603
105–735 9272

Proposed Rules:

101–19 8028
101–20 10379

42 CFR

54a 8528
66 9742
433 8982
435 8982
436 8982
455 11436
474 11436

Proposed Rules:

51g 9755
55a 9298
36 8314
405 ..... 9953, 10382

43 CFR

20 11402
1780 8176
3100 8885

Public Land Orders:

726 (Revoked by PLO 5695) 7816
995 (Amended by PLO 5692) 7815
5692 7815
5693 7815
5694 7815
5695 7816
5696 9565
5697 9578
5698 9587
5699 9593
5700 9604
5701 9623
5702 9632
5703 9640
5704 9649
5705 9663
5706 9668
5707 9674
5708 9691
5709 9699
5710 9704
5711 9716
5712 11132

Proposed Rules:

8340 8672

44 CFR

64 ..... 8603, 10346
65 9916
67 ..... 8013, 8988, 9916
70 8605–8624

Proposed Rules:

67 ..... 8672, 9033–9035

45 CFR

95 10793
121a 7550
134 7261
134a 7261
134b 7261
302 8982
304 8982
306 8982
801 ..... 7269, 7261
1050 8299
1061 ..... 8303, 10794
1071 8299

Proposed Rules:

17 10820
150 10821
161n 8314
179 7582
194 7582
196 7582
232 8316
233 8316
302 8316
1060 9960
1061 11082

46 CFR

4 8989
5 8989
25 7551
26 11108
57 10795
66 9930
78 11108
185 11108
252 8023

Proposed Rules:

525 11514

47 CFR

0 ..... 10347, 11133
73 ..... 10347, 10348, 11133
83 8989
90 9283
97 8990

Proposed Rules:

2 ..... 7583, 10384
21 10384
42 9020
61 10385
73 ..... 8029, 8673, 8674, 9021–9025, 9755
76 9021
83 7269
87 10384
90 ..... 7269, 7583, 10384
95 10606
99 7583

48 CFR

Proposed Rules:

52 9302

49 CFR

1 8992
10 8993
27 11495
192 9931
193 9184
531 9935
554 10796
571 ..... 7551, 10798
1033 ..... 7551, 8303–8306

Proposed Rules:

Ch. X 9962
171 9960
173 9960
178 9960
193 9220
195 8323
571 8324
640 9244
941 11141
1034 9027
1109 11142
1110 10386

50 CFR

26 ..... 8306, 9938
32 7816
33 8307
216 ..... 7262, 9284
230 11134
451 8624
611 ..... 9940, 11497
621 10349
652 9939
656 11497
671 10800
672 9940

Proposed Rules:

Ch. I 8675
17 ..... 8029, 8030, 10386
20 9028
216 10552
602 8686
611 8030
651 8030
680 ..... 8327, 9303
691 8328

AGENCY PUBLICATION ON ASSIGNED DAYS OF THE WEEK

The following agencies have agreed to publish all documents on two assigned days of the week (Monday/Thursday or Tuesday/Friday).

This is a voluntary program. (See OFR NOTICE FR 32914, August 6, 1976.)

Monday	Tuesday	Wednesday	Thursday	Friday
DOT/SECRETARY	USDA/ASCS		DOT/SECRETARY	USDA/ASCS
DOT/COAST GUARD	USDA/APHIS		DOT/COAST GUARD	USDA/APHIS
DOT/FAA	USDA/FNS		DOT/FAA	USDA/FNS
DOT/FHWA	USDA/FSQS		DOT/FHWA	USDA/FSQS
DOT/FRA	USDA/REA		DOT/FRA	USDA/REA
DOT/NHTSA	MSPB/OPM		DOT/NHTSA	MSPB/OPM
DOT/RSPA	LABOR		DOT/RSPA	LABOR
DOT/SLSDC	HEW/FDA		DOT/SLSDC	HEW/FDA
DOT/UMTA			DOT/UMTA	
CSA			CSA	

Documents normally scheduled for publication on a day that will be a Federal holiday will be published the next work day following the holiday.

Comments on this program are still invited. Comments should be submitted to the Day-of-the-Week Program Coordinator. Office of the Federal Register, National Archives and Records Service, General Services Administration, Washington, D.C. 20408

REMINDERS

The items in this list were editorially compiled as an aid to **Federal Register** users. Inclusion or exclusion from this list has no legal significance. Since this list is intended as a reminder, it does not include effective dates that occur within 14 days of publication.

Rules Going Into Effect Today

Note: There were no items eligible for inclusion in the list of **Rules Going Into Effect Today.**

Listing of Public Laws

Last Listing February 14, 1980

This is a continuing list of public bills from the current session of Congress which have become Federal laws. The text of laws is not published in the **Federal Register** but may be ordered in individual pamphlet form (referred to as "slip laws") from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (telephone 202–375–3030).

H.R. 5176 / Pub. L. 96–191 General Accounting Office Personnel Act of 1980. (Feb. 15, 1980; 94 Stat. 27) Price $1.00.

S. 1300 / Pub. L. 96192 "International Air Transportation Competition Act of 1979". (Feb. 15, 1980; 94 Stat. 35) Price $1.25.